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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,831

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Kenichi Machida

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7590

09/27/2010

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP  
1250 CONNECTICUT AVENUE, NW  
SUITE 700  
WASHINGTON, DC 20036

EXAMINER

SHEEHAN, JOHN P

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

09/27/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/560,831	<b>Applicant(s)</b> MACHIDA ET AL.	
	<b>Examiner</b> John P. Sheehan	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4 and 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 4, 2010 has been entered.

### ***Claim Rejections - 35 USC § 102/103***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over each of Daisuke et al. (Daisuke

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'303, Japanese Patent Document No. 01-117303, cited in the IDS submitted December 15, 2005) and Satoru et al. (Satoru '048, Japanese Patent Document No. 62-074048, cited in the IDS submitted December 15, 2005).

Daisuke '303 teaches a method of making a rare earth-iron-boron magnet comprising;

sputtering a layer of at least one of Tb, Dy, Al and Ga on to the surface of a rare earth-iron-boron magnet and

heat treating the coated magnet to cause the at least one of Tb, Dy, Al and Ga to diffuse into the rare earth-iron-boron magnet (Abstract). During this diffusion step the at least one of Tb, Dy, Al and Ga is diffused into the magnet as recited in the instant claims (See Abstract).

Daisuke '303's step of sputtering to apply the at least one of Nd, Pr, Dy, Ho, and Tb is encompassed by the step of "depositing vapor or fine particles" as recited in applicants' process claim 4 and is the same depositing process as is recited in applicants' claim 6. Thus, Daisuke '303 teaches the same process steps as recited in applicants' process claims 4 and 6. The elements Tb and Dy taught by Daisuke '303 are specifically recited in applicants' claims as element M. Regarding the rare earth-iron-boron composition, applicants' claims do not recite any specific composition but rather merely recite "a rare earth-iron-boron based magnet" and therefore encompass the rare earth-iron-boron magnet taught by Daisuke '303.

Saturo '048 teaches a method of making a rare earth-iron-boron magnet comprising;

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sputtering a layer of at least one of Nd, Pr, Dy, Ho, and Tb on to the surface of a rare earth-iron-boron magnet and

heat treating the coated magnet at a temperature of 400 to 900<sup>0</sup>C

(Abstract).

The elements Pr, Dy, Ho, and Tb taught by Saturo '048 are specifically recited in applicants' claims as element M. Saturo '048's step of sputtering to apply the at least one of Nd, Pr, Dy, Ho, and Tb is encompassed by the step of "depositing vapor or fine particles" as recited in applicants' claim 4 and is the same depositing process as is recited in applicants' claim 6. Saturo '048's heat treatment temperature of 400 to 900<sup>0</sup>C overlaps the diffusion heat treatment temperature of 500 to 1000<sup>0</sup>C recited in applicants' claims. Thus, Saturo '048 teaches the same process steps as recited in applicants' process claims 4 and 6. Regarding the rare earth-iron-boron composition, applicants' claims do not recite any specific composition but rather merely recite "a rare earth-iron-boron based magnet" and therefore encompass the rare earth-iron-boron magnet taught by Saturo '048.

The references and the claims differ in that the references are silent with respect to the following characteristics of the magnet produced by the claimed process:

$$H_{cj} > 1 + 0.2 \times M;$$

$$Br > 1.68 - 0.17 \times H_{cj};$$

the depth the element M is diffused into the rare earth-iron-boron magnet; and

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the concentration of the element M increases as the crystal grain boundary layer approaches to the surface of the magnet and the concentration of element M is 50 mass % or more at 10  $\mu\text{m}$  from the surface.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because, in view of the fact that, as set forth above, each of Daisuke '303's and Saturo '048's sintered magnetic materials have compositions which overlap the sintered magnetic material recited in the instant claims and are made by the same method, one of ordinary skill in the art would expect Daisuke '303's and Saturo '048's resulting magnetic material to have all the same properties as the magnetic material produced by applicants' claimed method, In re Best, 430 USPQ 195, MPEP 2112.01.

“Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). ‘When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.’ In re Spada, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977).” (emphasis added by the Examiner) see MPEP 2112.01.

### ***Response to Arguments***

4. Applicant's arguments filed May 4, 2010 have been fully considered but they are not persuasive.

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5. Applicants' argument that Daisuke '303 and Satoru '048 "do not sufficiently diffuse the element along the grain boundaries and these methods do not contribute to decrease the amount of element M" (applicants' response, page 6) is not persuasive. Applicants have not provided any evidence or reasoning to support their conclusion that Daisuke '303 and Satoru '048 "do not sufficiently diffuse the element along the grain boundaries and these method do not contribute to decrease the amount of element M". Further, applicants' claims are silent with respect to the degree of diffusion of the element M along the grain boundaries, that is, the feature upon which applicant relies (i.e., the degree of diffusion of the element M) is not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants point out values of coercive force from each of Daisuke '303 and Satoru '048 (applicants' response, page 6) but do not explicitly link the cited values to any specific point of argument that they are attempting to make. Further, even if the cited values were specifically linked to specific points of argument, each of the references is in Japanese which the Examiner does not read and therefore the Examiner would not be able to evaluate applicants' arguments based upon specific cited sections of the references.

**Declaration Under 37 CFR 1.132**

6. The Declaration under 37 CFR 1.132 filed May 4, 2010 is insufficient to overcome the rejection of claims 4 and 6 based upon each of Daisuke '303 and Satoru '048 as set forth in the last Office action because:

I. The declaration does not specifically set forth the actual process used to prepare the treated magnets listed in Table 2 of the declaration. It is not clear from the declaration if each of the process steps and process operating conditions recited in the claims were employed, for example, the oxygen and water vapor content of the claimed process, the diffusion temperature, etc. Also it is not clear whether the magnets of the invention achieved each of requirements A to C recited in claims 4 and 6.

II. On page 4 just above Figure 1 there appears to be some obliterated text to the declaration.

III. In the upper right hand corner of Figure 1 both the dark and light cross hatched patterns are designated "Treated magnets". It is not clear what this means and what, if any, impact this would have on the evaluation of the data in Figure 1.

IV. In Figure 1, there are two symbols designated as Typical magnets as treated by Daisuke et al. (JP 01-117303) and Satoru et al. (JP 62-074048). It is not stated how the "typical magnets" for each of Daisuke et al. and Satoru et al. was determined, what their compositions are, what process conditions were used to prepare these typical magnets, etc. For example, are these actual values from



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each of these references, if yes, then which examples? Also the Examiner questions how applicants converted the units for coercive force and remanence used in the references to the units used in Figure 1.

V. The declaration states and applicants also argue in their remarks that the magnets taught by each of Daisuke '303 and Satoru '048 "never give any magnetic parameters above the critical borderline presented in Fig. 1" and "This means that their methods are different from ours" (Declaration, page 7). The Examiner does not agree. As set forth above in I and IV, the process conditions used to prepare examples of applicants' magnets and the process conditions and alloy compositions used to prepare magnets representing Daisuke '303 and Satoru '048 are not set forth in the declaration. In view of this, the difference in results is not necessarily a difference in processes but may be caused by a difference in alloy compositions, a difference in the actual process conditions used to prepare each of the magnets, etc.

Applicants have not explained why, in spite of the fact that the claimed process and the processes taught by each of the references as explained above are the same, applicants' claimed process results in different products than result from the processes taught by each of Daisuke '303 and Satoru '048 as argued by applicants.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571)

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272-1249. The examiner can normally be reached on T-F (7:30-5:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John P. Sheehan/  
Primary Examiner, Art Unit 1793

JPS